UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,556	05/07/2002	David Graham Little	RICE-006	7597

7590 03/20/2008

NICK NALLAS
FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112-3800

EXAMINER	
KANTAMNENI, SHOBHA	
ART UNIT	PAPER NUMBER
1617	

MAIL DATE	DELIVERY MODE
03/20/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/049,556	LITTLE, DAVID GRAHAM	
	Examiner	Art Unit	
	Shobha Kantamneni	1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *48-53,63-66,73,74,79 and 80* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *NONE* is/are allowed.

6)☒ Claim(s) *48-53, 63-66, 73-74,79-80* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/21/2007 has been entered.

Applicant's amendment filed on 12/21/2007, wherein claims 48, and 63 have been amended.

Upon further consideration, the rejection of claims 48-52, 63-64 under 35 U.S.C. 102(b) as being anticipated by Yates (US 5,646,134, PTO-892) is herein withdrawn.

Claims 48-53, 63-66, 73-74, and 79-80 are pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 48-53, 63, 73, and 79 are rejected under 35 U.S.C. 102(a) as being anticipated by Ke et al. (US 6,352,970, PTO-892).

Ke et al. discloses that Zoledronate, the specific bisphosphonate of claim 73 is capable of treating bone fractures. See column 5, lines 22-29. The mode, dosage as a single dose, site, time and regiments of administration of claims 49-53 are taught at column 16, lines 13-64, column 17, lines 1-25 and lines 40-55. It is taught that the administration can be done in a regiment to the site as determined by the patients needs. The dosage of bisphosphonates is from about 0.1 to 10 mg/kg/day. See column 15, lines 28-33. The reference also discloses that administration of zoledronate can be by transdermal, intravenous or oral routes. See column 17, lines 1-7.

With respect to the recitation "a method for promoting bone growth at a fracture site", Ke's method will inherently promote bone growth at a fracture site, since the method steps are same as instantly claimed.

Response to Arguments

Applicant argues that "Though Ke discloses a combination of leptin or a leptin mimetic and a bisphosphonate for treating bone fracture, there is no teaching or implication that the bisphosphonate itself could be used for the same purpose." This argument has been considered, but not found persuasive because Ke et al discloses that bisphophonates such as Zoledronate in combination with leptin or leptin mimetic are employed in treating bone fractures. See column 5, lines 22-29; column 6, lines 9-12. Further, Ke also discloses that the method therein result in bone formation. See column 7, line 32. Thus, Ke's method of administering bisphophonates will inherently promote bone growth at a fracture site, as claimed herein since Ke's method steps are same as the instant method steps, administering the same compound in the same

amount to the same or similar patient population. See *Ex parte Novitski*, 26 USPQ 2d 1389, 1391 (Bd. Pat. App. & Int. 1993). See also *Eli Lilly and Co. v. Barr Laboratories Inc.* 251 F3d. 955; 58 USPQ2d 1869-1881 (Fed. Cir. 2001) with regard to inherency as it related to the claimed invention herein.

Applicant argues that "it is clear that Ke does not disclose or suggest the use of only bisphosphonate(s) to promote bone growth at a fracture site. In direct contrast, the drug of the present invention consists only of at least one bisphosphonate". This argument has been considered, but not found persuasive. It is respectfully pointed out that the instant method of promoting bone growth at a fracture site uses the transition phrase "comprising the step of" which does not exclude other steps such as administering other drugs along with bisphophonates.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 48-50, 52-53, 63-66, 74, and 80 are rejected under 35 U.S.C. 102(b) as being anticipated by GEDDES (WO 93/11786, PTO-1449).

Geddes et al. disclose a method of increasing bone mass in a human afflicted with osteoporosis comprising administering a bisphosphonate administration regimen. See abstract; page 20, lines 13-27. It is disclosed that the bisphophonate is administered at

least 1 day of every thirty day period i.e about 4 to 6 weeks after the initial dose. See page 5, lines 25-31. It is also taught that the therapeutic regimen comprising bisphosphonate is administered for at least about twelve months or until a net skeletal mass is obtained. See page 25, lines 8-15. It is taught that the treatment regimen can comprise a combination of two or more bisphosphonates. See pages 20-22. Bisphosphonates can be administered orally as a tablet containing 0.002 mgP/kg per day, in a unit-dosage form. Administration of bisphosphonates by intraperitoneal, intravenous, parenteral, transdermal routes is also disclosed. See page 25, and page 27, bottom paragraph. It is disclosed that when a human, African-American male with a history of atraumatic fractures was administered once a week with bisphosphonate, 4-amino-1-hydroxy-1,1-bisphosphonic acid, orally as a tablet containing 0.03 mgP/kg per day, demonstrated an increase in 14.5 mg/cc spinal bone mineral, and no further atraumatic fractures were observed. See page 29, EXAMPLE 2.

With respect to the recitation "a method for promoting bone growth at a fracture site", Gedde's method will inherently promote bone growth at a fracture site, since the method steps are same as instantly claimed.

Thus Geddes anticipates the instant claims 48-50, 52-53, 63-66, 74, and 80.

Response to Arguments

Applicant argues that "Geddes does not teach or suggest the promotion of bone growth at a fracture site. Geddes' disclosure of the administration of a bisphosphonate to a subject with a history of atraumatic fractures is not the same as a teaching (or suggestion) of administration to a subject with a bone fracture." These arguments have

been considered, but not found persuasive because Geddes discloses a method of treating a male with atraumatic fracture by administering a bisphosphonate. Thus, Geddes method of administering bisphophonates will inherently promote bone growth at a fracture site, as claimed herein since Geddes method steps are same as the instant method steps, administering the same compound in the same amount to the same or similar patient population will cause the same effect, whether or not that effect is disclosed by the prior art.

Note that even the claiming of a new use, new function or unknown property which is inherently present in the prior art does not make the claim patentable, or would not by itself carry patentable weight if the prior art teaches the same or nearly the same method steps. See *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). See also *Eli Lilly and Co. v. Barr Laboratories Inc.* 251 F3d. 955; 58 USPQ2d 1869-1881 (Fed. Cir. 2001) with regard to inherency as it related to the claimed invention herein.

Further, it is respectfully pointed out that the instant method of promoting bone growth at a fracture site uses the transition phrase "comprising the step of" which does not exclude other steps such as administering other drugs along with bisphophonates. Thus Geddes anticipates the instant claims 48-50, 52-53, 63-66, 74, and 80.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 48-52, 63-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yates (US 5,646,134, PTO-892 of record).

Yates discloses a method of treating periproshetic bone loss comprising administering bisphosphonate to a patient such as human. See column 2, lines 45-62. See column 1, lines 33-38; column 2, lines 64-67; column 4, lines 10-14; column 6, EXAMPLE. . It is also taught that localized controlled or extended release bone growth promotants are useful, since there are 5 million fractures, and 265,000 prosthetic implants per year in United States. See column 1, lines 33-39. It is disclosed that the bisphosphonate can be administered to the periprosthetic bone area systemically either orally as tablets and/or parenterally, including subcutaneous or intravenous injection, or can be delivered in a slow release form. The bisphosphonate can be administered locally to the specific periprosthetic area in need of bone growth or repair. See column 3, lines 54-66. Bisphosphonates delivered in sustained release form is useful in improving implant fixation for example for improving in growth of new bone into a metal prosthesis in joint reconstruction or orthopedic implants. See column 4, lines 10-13. It is also taught that the bisphophonates can be administered by coating the orthopedic implants at the time of the implant operation. See column 4, lines 14-16. An effective dose of bisphophonate is about 1.5 to 3000 µg/kg per day of body weight. Effective doses for local administration are about 0.001 µg to 1 mg per application site. See column 5, lines 1-5.

Yates does not explicitly teach a method of promoting bone growth at a fracture site comprising administering to a human with a fractured bone an effective amount of bisphophonate.

It would have been obvious to a person of ordinary skill in the art at the time of invention to administer bisphosphonate for promoting bone growth at a fracture site because 1) Yates teaches that prosthetic implants are employed to repair fractures, and 2) Yates teaches that administration of bisphosphonate improves in growth of new bone into a metal prosthesis in joint reconstruction or orthopedic implants. One of ordinary skill in the art at the time of invention would have been motivated to administer bisphosphonate to human with fractured bone with reasonable expectation of success of promoting bone growth at the fracture site, since bisphophonates are known to be bone growth promoters.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shobha Kantamneni whose telephone number is 571-272-2930. The examiner can normally be reached on Monday-Tuesday, and Thursday-Friday, between 7.30am-3.30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan, Ph.D can be reached on 571-272-0629. The fax

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shobha Kantamneni, Ph.D
Patent Examiner
Art Unit : 1617

/SREENI PADMANABHAN/

Supervisory Patent Examiner, Art Unit 1617